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CASE PP/1-21421/A/CGM 432/DIV

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF
KURT HOFFMANN ET AL
APPLICATION NO: 09/879,422
FILED: JUNE 12, 2001
FOR: DUST-FREE, EPOXY-CONTAINING
STABILIZER GRANULES AND THE
PREPARATION PROCESS

Group Art Unit: 1712

Examiner: R. Sellers

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

TRANSMITTAL LETTER

Sir:

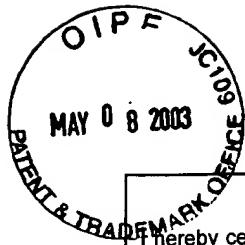
Enclosed herewith are three copies of the Appeal Brief in the above-identified application.

Please charge Deposit Account No. 03-1935 in the amount of \$320.00 for payment of the fee. Two additional copies of this paper are here enclosed. The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment, to Account No. 03-1935.

Respectfully submitted,

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FOR: DUST-FREE, EPOXY-CONTAINING
STABILIZER GRANULES AND THE
PREPARATION PROCESS

Commissioner for Patents

Washington, D.C. 20231

APPEAL BRIEF

Dear Sir:

This is an appeal from an Office Action, dated December 27, 2002, finally rejecting claims 21-23 and 26-30 in reference to the above-identified patent application.

A Notice of Appeal and requisite fee were date stamped as received on March 4, 2003 making the instant Appeal Brief due by May 4, 2003.

The Commissioner is authorized to charge any fees due, or credit any overpayment, as a result of this Appeal Brief to Deposit Account No. 03-1935.

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REAL PARTY IN INTEREST

Ciba Specialty Chemicals Corporation is the Assignee and owner of the above-identified patent application by virtue of an assignment from the inventors which was mailed to the United States Patent and Trademark Office and record on reel/frame (011901/0160).

RELATED APPEALS AND INTERFERENCES

Appellants, their attorney and the Assignee aver that they know of no other appeals or interferences which would directly affect, be directly affected by or have a bearing on the Board's decision on the pending appeal.

STATUS OF THE CLAIMS

A clear copy of the pending claims appears in the Appendix attached hereto. Claims 24 and 25 stand withdrawn as being directed to a non-elected invention (species requirement).

STATUS OF AMENDMENTS

The claims were not amended in response to the final rejection.

SUMMARY OF INVENTION

All of the claims are directed to low dust plastic additive granules having a selected particle size and loose bulk density that comprise one or more selected additives and at least one bisphenol A diglycidyl ether (Bis-A DGE). Additionally, the low dust plastic additive granules are prepared by heating at least one of the selected additives and the Bis-A DGE that is solid at room temperature to melt at least 80% of the Bis-A DGE and pressing the melt through a plate with dies or perforations.

STATEMENT OF THE ISSUES

Whether there is sufficient basis to combine the references in the manner urged by the Examiner.

If so, whether the combination of references provides sufficient guidance or motivation to arrive at the instantly claimed low-dust plastic additive granules.

GROUPING OF THE CLAIMS

The claims stand or fall together.

THE REJECTIONS

The Examiner rejects claims 21-23 and 26-30 under 35 U.S.C. 103 as being unpatentable over U.S. Pat. No. 4,446,086 ("Molenaar et al.") and published European patent application 719,824 ("EP '824") in view of published British patent 1,358,637 ("GB '637") and published PCT application WO 94/29377 ("WO '377").

ARGUMENT

A determination of obviousness is a highly fact-intensive inquiry to determine whether the claimed invention, as a whole, would have been obvious at the time the invention was made. In Graham v. John Deere, 148 U.S.P.Q. 459 (1966), the Supreme Court held that in determining obviousness, the courts and the USPTO should consider 1) the scope and content of the prior art, 2) differences between the prior art and claims at issue and 3) the level of ordinary skill in the pertinent art.

The Examiner argues that Molenaar and EP '824 disclose a dust-free granular blend including epoxidized oils prepared by extrusion through a thin perforated die. Claim 21

requires the presence of at least one Bis-A DGE that is solid at room temperature. The Examiner acknowledges that the prior art does not disclose this feature.

The Examiner asserts that GB '637 and WO '377 disclose the use of bisphenol A diglycidyl ether as part of their stabilizer systems. Hence, the Examiner alleges that it would have been obvious to use a bis-A DGE in the stabilizer systems described in Molenaar and EP '824.

There Is Insufficient Basis To Combine

The References In The Manner Suggested By The Examiner.

The primary reference is directed to a process for producing dust-free blends of additives by extrusion. The extrudable compositions of Molenaar are a blend of a lead compound and one or more further additives for subsequent use in the manufacture of plastics. Column 3, lines 28-31. Molenaar indicates that the composition may contain further additives, including plasticizers, such as epoxidized oils. The Examiner latches onto the presence of an epoxidized oil to provide motivation to incorporate any epoxy-containing compound into the composition. The secondary references are drawn to stabilizer mixtures that contain polyfunctional epoxide compounds. The blends are alleged to exhibit improved stabilizing performance.

✓ The common epoxy element is used in the primary and secondary references for cross-purposes, or at the very least, dissimilar reasons. Hence, there is no basis for combining the granule reference with the stabilizer blend patents cited by the Examiner. For this reason, Applicants submit that the Examiner's rejection is in error and should be reversed.

Even assuming the references can be combined,

the combination fails to disclose or suggest the claimed invention.

The secondary references are cited to show that it would be obvious to incorporate a further additive into the compositions of Molenaar. However, as noted above, the suggested further additives are plasticizers.

A plasticizer is defined in Hackh's Chemical Dictionary as:

"A liquid having a low vapor pressure at room temperature. Used to: (1) modify flow properties, as of synthetic resins; (2) reduce evaporation rate, as of a paint solvent; (3) impart flexibility and toughness to a plastic, paint or varnish film, e.g. phthalates in lacquers. Cf. lacquer solvents."

✓ Clearly, those skilled in the art would not consider a Bis-A DGE that is solid at room temperature to be equivalent to a plasticizer even given the teachings in the secondary references.

There must be some motivating force, which would impel persons skilled in the art to do what applicant has done. Ex parte Levengood, 28 U.S.P.Q.2d 1300, 1301 (Fed.Cir. 1993). See also, In re Grabiak, 226 U.S.P.Q. 870, 872 (Fed.Cir. 1985) ("The mere fact that it is possible to find two isolated disclosures which might be combined in such a way to produce a new compound does not necessarily render such a production obvious unless the art also contains something to suggest the desirability of the proposed combination.").

✓ The resin cited by the Examiner WO '377 is liquid at room temperature. The secondary references cited by the Examiner do not provide any motivation to use a Bis-A DGE that is solid at room temperature as a further plasticizer additive in the compositions of Molenaar. Furthermore, to the extent Molenaar refers to additional "liquefiable additives", such are limited to lubricants usually used in plastics processing. Column 6, lines 5-60. Applicants submit that the Examiner's obviousness rejection is in error and should be reversed.

Respectfully submitted



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Encl. Hackh's Dictionary, 4th Edition, p. 527
Attachments: Appendix

APPENDIX

Claims on Appeal

21. Low-dust granules of plastics additives having a particle size distribution of between 1 mm and 6 mm as defined in accordance with ISO 3435 and a loose bulk density of greater than 500 g/l comprising

a) a phenolic antioxidant, an organic phosphite or phosphonite, a phosphonate, a sterically hindered amine or a UV absorber, individually, or a mixture of these compounds and

b) 10-90 % by weight of at least one bisphenol A diglycidyl ether,

which granules are prepared by a process which comprises heating

a) a phenolic antioxidant, an organic phosphite or phosphonite, a phosphonate, a sterically hindered amine or a UV absorber, individually, or a mixture of these compounds, and

b) at least one at least one bisphenol A diglycidyl ether which is solid at room temperature,

to an extent such that at least 80% by weight of the bisphenol A diglycidyl ether has melted, pressing the melt through a plate provided with dies or perforations, the die or perforation diameter being between 1 and 10 mm, and chopping the resulting strands in the plastic state to form granules,

wherein the temperature before the outlet die (at the die head) is between 60-160° C.

22. Granules according to claim 21, which have a free flow in accordance with DIN 53492 of less than 15 s (tR15).

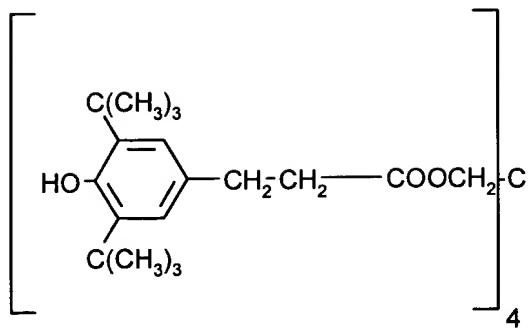
23. Granules according to claim 21, which have a fine fraction as determined by the Heubach test of not more than 0.1% by weight.

24. Granules according to claim 21, which comprise further plastics additives from the group of the hydrotalcites, metal oxides, metal carbonates, metal soaps, antistats, antiblocking agents, flame retardants, thioesters, internal and external lubricants, processing aids and pigments.

25. Granules according to claim 21, which consist of 30-80% by weight of epoxy compound, 5-25% by weight of an antioxidant of the sterically hindered phenol type, 5-25% by weight of a phosphite or phosphonite, 10-40% by weight of CaO and 1-5% by weight of calcium stearate.

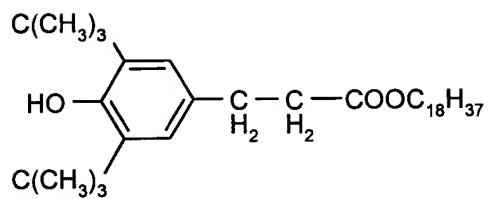
26. Granules according to claim 21, which consist of 50-80% by weight of epoxy compound and of 50-20% by weight of a phosphonate.

27. Granules according to claim 21, which comprise as phenolic antioxidant 3,5,3',5'-tetra-tert-butyl-4,4'-dihydroxydibenzyl ether, octadecyl 4-hydroxy-3,5-dimethylbenzylmercaptoacetate, tris(3,5-di-tert-butyl-4-hydroxybenzyl)-amine, bis(4-tert-butyl-3-hydroxy-2,6-dimethylbenzyl) dithiophthalate, bis(3,5-di-tert-butyl-4-hydroxybenzyl) sulfide, isoctyl 3,5-di-tert-butyl-4-hydroxybenzylmercaptoacetate, 1,3,5-tris(3,5-di-tert-butyl-4-hydroxybenzyl)-2,4,6-trimethylbenzene, 1,4-bis(3,5-di-tert-butyl-4-hydroxybenzyl)-2,3,5,6-tetramethylbenzene, 2,4,6-tris(3,5-di-tert-butyl-4-hydroxybenzyl)phenol; 2,4-bisoctylmercapto-6-(3,5-di-tert-butyl-4-hydroxyanilino)-1,3,5-triazine, 2-octylmercapto-4,6-bis(3,5-di-tert-butyl-4-hydroxyanilino)-1,3,5-triazine, 2-octylmercapto-4,6-bis(3,5-di-tert-butyl-4-hydroxyphenoxy)-1,3,5-triazine, 2,4,6-tris(3,5-di-tert-butyl-4-hydroxyphenoxy)-1,2,3-triazine, 1,3,5-tris(3,5-di-tert-butyl-4-hydroxybenzyl) isocyanurate, 1,3,5-tris(4-tert-butyl-3-hydroxy-2,6-dimethylbenzyl) isocyanurate, 2,4,6-tris(3,5-di-tert-butyl-4-hydroxyphenylethyl)-1,3,5-triazine, 1,3,5-tris(3,5-di-tert-butyl-4-hydroxyphenylpropionyl)hexahydro-1,3,5-triazine, 1,3,5-tris(3,5-dicyclohexyl-4-hydroxybenzyl) isocyanurate; 4-hydroxylauranilide, 4-hydroxystearanilide, octyl N-(3,5-di-tert-butyl-4-hydroxyphenyl)carbamate; or an ester of -(3,5-di-tert-butyl-4-hydroxyphenyl)propionic acid with methanol, ethanol, octanol, octadecanol, 1,6-hexanediol, 1,9-nanediol, ethylene glycol, 1,2-propanediol, neopentyl glycol, thiidiethylene glycol, diethylene glycol, triethylene glycol, pentaerythritol, tris(hydroxyethyl) isocyanurate, N,N'-bis(hydroxyethyl)oxalamide, 3-thiaundecanol, 3-thiapentadecanol, trimethylhexanediol, trimethylolpropane, 4-hydroxymethyl-1-phospho-2,6,7-trioxabicyclo[2.2.2]octane or

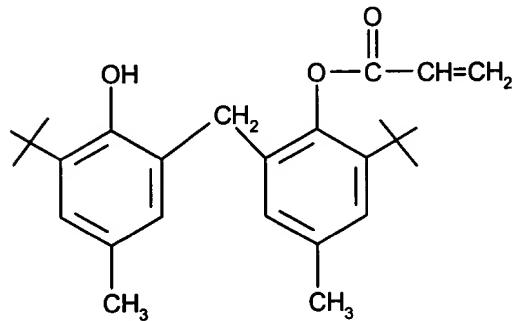


β -(3,5-di-tert-butyl-4-hydroxyphenyl)propionic ester of pentaerythritol

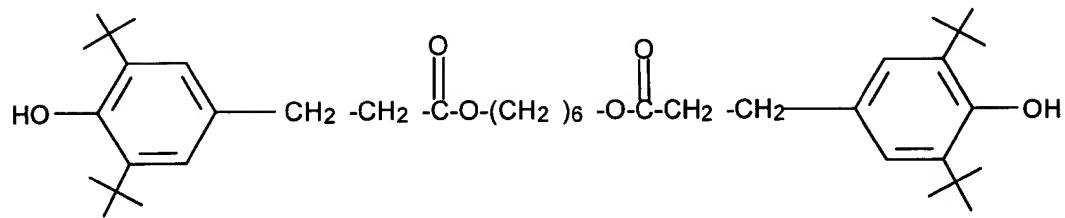
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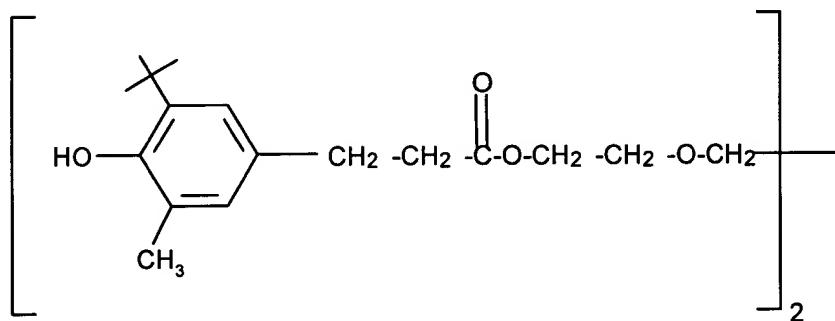
octadecyl-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate



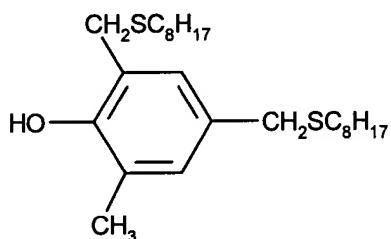
2-(1,1-dimethylethyl)-6-[[3-(1,1-dimethylethyl)-2-hydroxy-5-methylphenyl]methyl]-4-methylphenyl 2-propenoate;



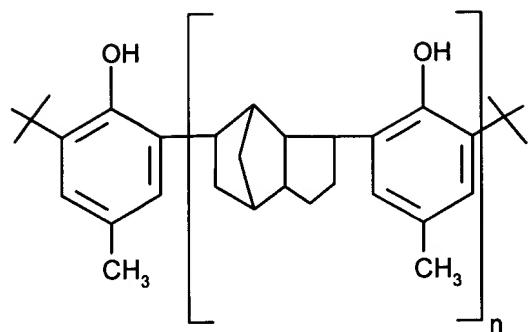
1,6-hexanediyI 3,5-bis(1,1-dimethylethyl)-4-hydroxyphenylpropanoate;



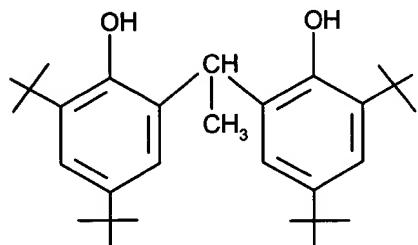
1,2-ethanediylbis(oxy-2,1-ethanediyl) 3-(1,1-dimethylethyl)-4-hydroxy-5-methylphenylpropanoate;



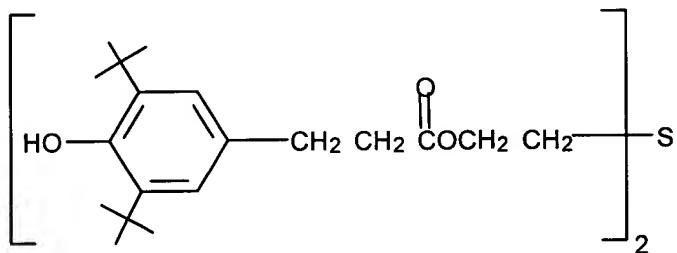
{2-methyl-4,6-bis[(octylthio)methyl]phenol};



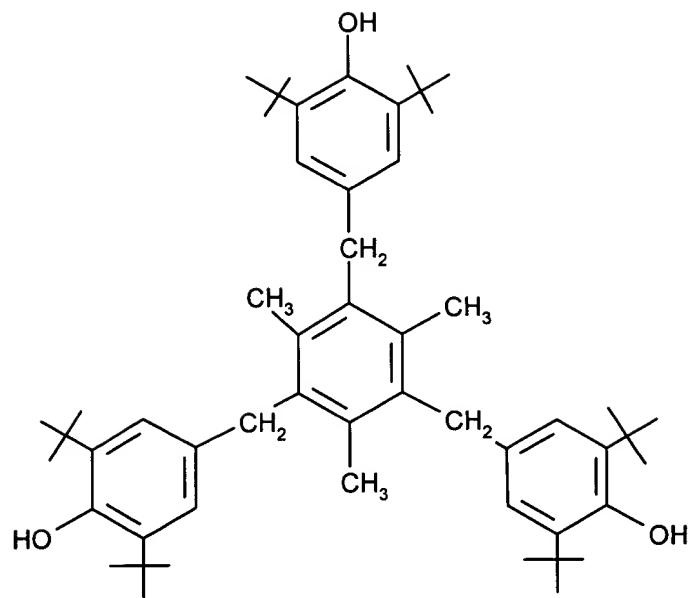
butylated reaction product of para-cresol and dicyclopentadiene (average molecular weight 600-700)



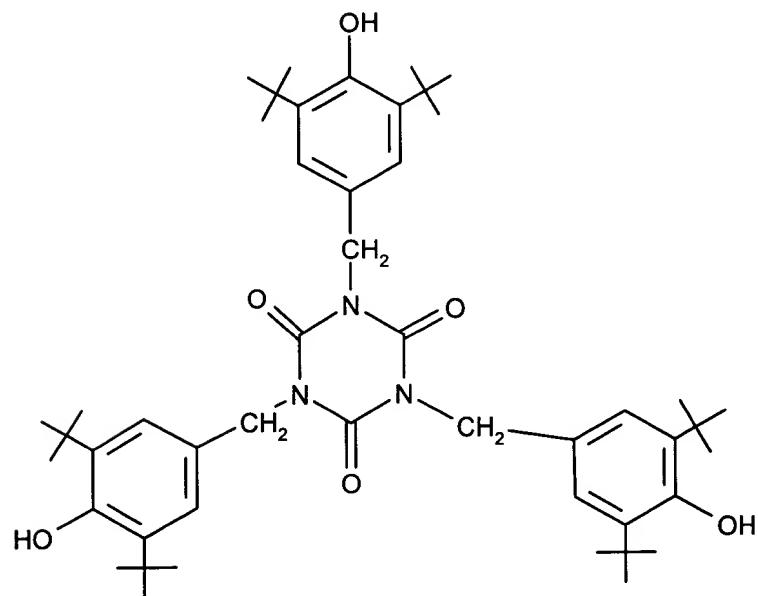
2,2'-ethylenedibis-(4,6-di-tert-butylphenol);



thiodi-2,1-ethanediyl 3,5-bis(1,1-dimethylethyl)-4-hydroxyphenylpropanoate;



4,4',4''-[(2,4,6-trimethyl-1,3,5-phenyltriyl)tris (methylene)]tris[2,6-bis(1,1-dimethylethyl)phenol];



1,3,5-tris[[3,5-bis(1,1-dimethylethyl)-4-hydroxyphenyl]methyl]-1,3,5-triazine-2,4,6(1H,3H,5H)-trione.

28. Granules according to claim 21, which comprise as phosphonate dimethyl 2,5-di-tert-butyl-4-hydroxybenzyl-phosphonate, diethyl 3,5-di-tert-butyl-4-hydroxybenzylphosphonate, dioctadecyl 3,5-di-tert-butyl-4-hydroxybenzylphosphonate, dioctadecyl-5-tert-butyl-4-hydroxy-3-methylbenzyl-phosphonate and the calcium salt of 3,5-di-tert-butyl-4-hydroxybenzylphosphonic acid monoethyl ester.

29. Granules according to claim 21, which comprise as phosphites or phosphonites triphenyl phosphite, diphenyl alkyl phosphites, phenyl dialkyl phosphites, tris(diphenylalkylphosphito)amines, tris(nonylphenyl) phosphite, trilauryl phosphite, trioctadecyl phosphite, distearyl pentaerythrityl diphosphite, tris(2,4-di-tert-butylphenyl) phosphite, bis(2,4-di-tert-butylphenyl) pentaerythrityl diphosphite, tristearyl sorbityl triphosphite, tetrakis(2,4-di-tert-butylphenyl) 4,4'-biphenylenediphosphonite, 3,9-bis(2,4-di-tert-butyl-4-methylphenoxy)-2,4,8,10-tetraoxa-3,9-diphosphaspiro[5.5]undecane, 3,9-tris(2,4,6-tris-tert-butylphenoxy)-2,4,8,10-tetraoxa-3,9-diphosphaspiro[5.5]undecane, 2,4,6-tris-tert-butylphenyl 2-butyl-2-ethyl-1,3-propanediyl phosphite and 2,2'-ethylidenebis(4,6-di-tert-butylphenyl) fluorophosphite.

30. Granules according to claim 21, prepared by a process which comprises heating
a) a phenolic antioxidant, an organic phosphite or phosphonite, a phosphonate, a sterically hindered amine or a UV absorber, individually, or a mixture of these compounds, and
b) at least one at least one bisphenol A diglycidyl ether which is solid at room temperature,

to an extent such that at least 80% by weight of the bisphenol A diglycidyl ether has melted, pressing the melt through a plate provided with dies or perforations, the die or perforation diameter being between 1 and 10 mm, and chopping the resulting strands in the plastic state to form granules,

wherein the temperature before the outlet die (at the die head) is between 80-120° C.